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- ☐ Fee Transmittal Form
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- ☐ Information Disclosure Statement
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- ☐ Drawing(s)
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Verification and English Translation of Taiwan Application No. 92201621 filed 28 January 2003

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

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INTELLECTUAL PROPERTY OFFICE
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REPUBLIC OF CHINA

茲證明所附文件，係本局存檔中原申請案的副本，正確無訛，
其申請資料如下 ：

This is to certify that annexed is a true copy from the records of this office of the application as originally filed which is identified hereunder：

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申 請 案 號：092201621
Application No.

申　請　人：台灣莫仕股份有限公司、莫仕股份有限公司
Applicant(s)

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（以上各欄由本局填註）

新型專利說明書

一、新型名稱	中 文	電子卡連接器（二）
	英 文	
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四、中文創作摘要　（創作名稱：電子卡連接器（二））

一種電子卡連接器（二），包括有絕緣本體、導電端子及彈性端子所構成，該絕緣本體側壁設有架高凸柱，該架高凸柱外側具有凸塊，該彈性端子各具有一本體、一彈性臂及一焊接部，該彈性臂係由該本體一側延伸而成，該焊接部係由該本體下緣彎折形成，該本體與該焊接部間設有一開口，該彈性端子係組裝於該絕緣本體側壁上，且令該彈性端子之開口與該凸塊相互扣合；藉此，可使彈性端子有效的固定，不會產生搖晃、鬆動，使彈性端子間可維持良好的接觸，且在運送過程中，彈性端子不會因碰觸而向外偏移、翹起或晃動。

五、（一）、本案代表圖為：第一圖

（二）、本案代表圖之元件代表符號簡單說明：

英文創作摘要　（創作名稱：）

四、中文創作摘要　（創作名稱：電子卡連接器（二））

10	絕緣本體	13	插置空間
14	第一架高凸柱	141	凸塊
15	第二架高凸柱	151	凸塊
20	導電端子	30	第一彈性端子
31	本體	32	彈性臂
33	焊接部	34	開口
35	簷部	40	第二彈性端子
41	本體	42	彈性臂
43	焊接部	44	開口
45	接觸臂		

英文創作摘要　（創作名稱：）

一、本案已向

國家(地區)申請專利	申請日期	案號	主張專利法第一百零五條準用第二十四條第一項優先權
無			

二、□主張專利法第一百零五條準用第二十五條之一第一項優先權:

申請案號:

無

日期:

三、主張本案係符合專利法第九十八條第一項□第一款但書或□第二款但書規定之期間

日期:

五、創作說明（1）

【新型所屬之技術領域】

本創作係有關於一種電子卡連接器（二），尤指一種可供電子卡插置，使電子卡可電連接至電路結構或儲存裝置之電子卡連接器。

【先前技術】

按，電子卡（ＩＣ卡）為一資料輸入裝置，其可電連接至一電路結構或一儲存裝置，例如文字處理器、個人電腦或其他電路結構，儲存在電子卡內的資料將被傳輸至該電路結構，電子卡係為一種可攜帶的工具，其可由一電子卡連接器輕易的插入及退出。

習知的電子卡連接器，可用以插接及退出電子卡，為了提供防止寫入的功能，一般係於電子卡連接器之絕緣本體一側壁上固定有二彈性端子，該二彈性端子各具有一彈性臂，且該二彈性端子之彈性臂係維持有一定距離，藉該二彈性端子組成一防止寫入之控制開關。

當電子卡之控制元件切換成可寫入功能時，在電子卡插置於該電子卡連接器中時，該電子卡一側之控制元件會頂觸其中一彈性端子之彈性臂向外移動並與另一彈性端子對應之彈性臂接觸，使該二彈性端子導通，並將訊號傳遞至電路板，使電子卡成可寫入狀態。

當電子卡之控制元件切換成防止寫入功能時，在電子卡插置於該電子卡連接器中時，該電子卡一側之控制元件不會頂觸該二彈性端子接觸導通，使電子卡成防止寫入狀態。

惟，上述習知之電子卡連接器，其作為防止寫入控制開關之彈性端子，一般僅利用設於彈性端子之本體二側的倒刺與絕緣本體固定，彈性端子的固持效果較差，當電子卡在插入或抽出的過程中，會導致彈性端子產生搖晃、鬆動，進而使得彈性端子間無法維持良好的接觸，使其無法發揮正常的功能。尤其是採架高設計之電子卡連接器，由於彈性端子下端需向下延伸較長的長度，故彈性端子下端之焊接部會產生較大的力矩，在運送過程中，容易被碰觸而向外偏移、翹起或晃動，進而導致彈性端子的損壞。

是以，由上可知，上述習知的電子卡連接器，在實際使用上，顯然具有不便與缺失存在，而可待加以改善者。

緣是，本創作人有感上述缺失之可改善，乃特潛心研究並配合學理之運用，終於提出一種設計合理且有效改善上述缺失之本創作。

【新型內容】

本創作之主要目的，在於可提供一種電子卡連接器（二），其可使電子卡連接器之彈性端子有效的固定，使彈性端子不會產生搖晃、鬆動，使彈性端子間可維持良好的接觸，且在運送過程中，不會因碰觸而向外偏移、翹起或晃動。

為了達成上述之目的，本創作係提供一種電子卡連接器（二），包括：一絕緣本體，其具有一主體及左、右二側架，該主體與該二側架之間形成一插置空間，該絕緣本體側壁設有架高凸柱，該架高凸柱外側具有凸塊；複數個

導電端子，其設置於該絕緣本體之主體上；以及彈性端子，其各具有一本體、一彈性臂及一焊接部，該彈性臂係由該本體延伸而成，該焊接部係由該本體下緣彎折形成，該本體與該焊接部間設有一開口，該彈性端子係組裝於該絕緣本體側壁上，且令該彈性端子之開口與該凸塊相互扣合。

為使能更進一步瞭解本創作之特徵及技術內容，請參閱以下有關本創作之詳細說明與附圖，然而所附圖式僅提供參考與說明用，並非用來對本創作加以限制者。

【實施方式】

請參閱第一圖、第二圖、第三圖及第四圖，本創作係提供一種電子卡連接器（二），其可用以插接及退出電子卡，該電子卡連接器包括有一絕緣本體１０、複數個導電端子２０、一第一彈性端子３０及一第二彈性端子４０所構成，其中該絕緣本體１０係以塑膠材料製成，其具有一主體１１及左、右二側架１２，該二側架１２係一體成型連接於該主體１１二側，藉以構成一「U」型體，使該主體１１與該二側架１２之間形成有一插置空間１３，該插置空間１３可供一電子卡插置。

該絕緣本體１０二側壁各設有一第一架高凸柱１４及一第二架高凸柱１５，可用以架高該絕緣本體１０，且該絕緣本體１０一側壁之架高凸柱１４及１５外側各具有一凸塊１４１、１５１，該凸塊１４１、１５１係呈「L」型體。該絕緣本體１０一側壁上並設有二限位槽１６、１

８，以便於分別定位第一彈性端子３０及第二彈性端子４０，凸塊１４１、１５１係分別位於限位槽１６、１８中間。另於該絕緣本體１０上緣於凸塊１４１上方處設有一擋止部１７。

該等導電端子２０係以導電性良好的金屬材料製成，其間隔設置於該絕緣本體１０之主體１１上，該等導電端子２０各具有一接觸部２１及一接腳部２２。當電子卡插置於該插置空間１３內時，該等導電端子２０之接觸部２１可與設置於電子卡上之對應端子形成電性連接。該等導電端子２０另一端之接腳部２２則延伸出絕緣本體１０外，可用以銲接於電路板上，使該等導電端子２０與電路板形成電性連接。

該第一彈性端子３０係以導電性良好的金屬材料製成，其係具有一本體３１、一彈性臂３２及一焊接部３３，該彈性臂３２係由該本體３１一側上緣處水平延伸而成，該焊接部３３係由該本體３１下緣向外彎折形成，該本體３１與該焊接部３３間並設有一開口３４，且該本體３１上緣另向外彎折形成有一簷部３５，該本體３１二側並設有相對之倒刺３６。

該第一彈性端子３０之本體３１係組裝於該絕緣本體１０一側壁上之限位槽１６中，且令該第一彈性端子３０之開口３４與該凸塊１４１相互扣合，且該開口３４上緣可抵觸於該凸塊１４１上，用以防止該第一彈性端子３０向下移動，而該本體３１二側之倒刺３６可刺入該絕緣本

體１０塑膠材料中，使該第一彈性端子３０之本體３１利用干涉作用固定於該絕緣本體１０上，而該本體３１上緣之簷部３５則可抵靠於該絕緣本體１０上緣之擋止部１７，用以防止該第一彈性端子３０向上移動。該第一彈性端子３０之焊接部３３可用以焊接於電路板上，使該第一彈性端子３０與電路板達成電性連接。

該第二彈性端子４０係以導電性良好的金屬材料製成，其係具有一本體４１、一彈性臂４２及一焊接部４３，該彈性臂４２係由該本體４１一側上緣處水平延伸而成，該焊接部４３係由該本體４１下緣向外彎折形成，該本體４１與該焊接部４３間並設有一開口４４，且該本體４１另一側上緣處水平延伸形成有一接觸臂４５，該接觸臂４５與該彈性臂４２大致呈直角狀，另於該本體４１二側設有相對之倒刺４６。

該第二彈性端子４０之本體４１係組裝於該絕緣本體１０一側壁上之限位槽１８中，且令該第二彈性端子４０之開口４４與該凸塊１５１相互扣合，且該開口４４上緣可抵觸於該凸塊１５１上，用以防止該第二彈性端子４０向下移動，且該本體４１二側之倒刺４６可刺入該絕緣本體１０塑膠材料中，使該第二彈性端子４０之本體４１利用干涉作用固定於該絕緣本體１０。該第二彈性端子４０之焊接部４３可用以焊接於電路板上，使該第二彈性端子４０與電路板達成電性連接。該第二彈性端子４０之彈性臂４２係位於該第一彈性端子３０之彈性臂３２內側一定

距離處，當電子卡插置於該絕緣本體１０之插置空間１３中時，該電子卡會頂觸該第二彈性端子４０之彈性臂４２向外移動並與該第一彈性端子３０對應之彈性臂３２接觸導通，藉該第一彈性端子３０及該第二彈性端子４０組成一防止寫入之控制開關。

另，該絕緣本體１０上進一步的設有一上蓋６０，且該絕緣本體１０上另進一步的設有一第三彈性端子５０，該第三彈性端子５０一端具有一彈性臂５１，該彈性臂５１係位於該第二彈性端子４０之接觸臂４５前方一定距離處，當電子卡插置於該絕緣本體１０之插置空間１３中時，該電子卡一端會頂觸該第三彈性端子５０之彈性臂５１向後移動並與該第二彈性端子４０對應之接觸臂４５接觸，使第該三彈性端子５０與該第二彈性端子４０達成電性連接，藉以導通電子卡連接器的電路，使電子卡連接器開始運作；藉由上述之組成以形成本創作之電子卡連接器（二）。

當電子卡之控制元件切換成可寫入功能時，在電子卡插置於該絕緣本體１０之插置空間１３中時，該電子卡一側之控制元件會頂觸該第二彈性端子４０之彈性臂４２向外移動並與該第一彈性端子３０對應之彈性臂３２接觸，使該二彈性端子３０及４０導通，並將訊號傳遞至電路板，使電子卡成可寫入狀態。

當電子卡之控制元件切換成防止寫入功能時，在電子卡插置於該絕緣本體１０之插置空間１３中時，該電子卡

五、創作說明（7）

一側之控制元件不會頂觸該第二彈性端子４０之彈性臂４２向外移動，因此該二彈性端子３０及４０不會導通，使電子卡成防止寫入狀態。

本創作主要係於該絕緣本體１０側壁設有凸塊１４１、１５１，且於第一彈性端子３０、第二彈性端子４０上設有相對應之開口３４、４４，使開口３４、４４可與凸塊１４１、１５１相互扣合，因此第一彈性端子３０、第二彈性端子４０除了利用本體３１、４１與限位槽１６、１８配合，以及其二側之倒刺３６、４６固定於該絕緣本體１０，用以防止第一彈性端子３０、第二彈性端子４０產生前後、左右的移動外，更可利用開口３４、４４與凸塊１４１、１５１的相互扣合，以及其焊接部３３、４３焊接於電路板上，而使第一彈性端子３０、第二彈性端子４０不會向下移動，以具有多方向的固定力量，再搭配該第一彈性端子３０之本體３１上緣的簷部３５抵靠於該絕緣本體１０上緣之擋止部１７，用以防止該第一彈性端子３０向上移動，可使第一彈性端子３０更加穩固的固定於該絕緣本體１０上，故本創作電子卡連接器之彈性端子３０、４０，可有效的固定，使彈性端子３０、４０在電子卡插入或抽出的過程中不會產生搖晃、鬆動，而使彈性端子３０、４０間可維持良好的接觸。

再者，本創作之第一彈性端子３０、第二彈性端子４０係利用開口３４、４４與凸塊１４１、１５１相互扣合，由於開口３４、４４寬度係與凸塊１４１、１５１寬度

相等，故可穩固的定位彈性端子３０、４０，使彈性端子３０、４０不會產生前、後移動，且彈性端子３０、４０下端部份更可利用凸塊１４１、１５１之直立部份壓制固定，使彈性端子３０、４０下端部份穩固的定位，而無被向外扳動之虞，因此對於採架高設計之電子卡連接器而言，在運送過程中，彈性端子３０、４０下端部份則不會因碰觸而向外偏移、翹起或晃動。

綜上所述，本創作實為一不可多得之新型創作產品，極具產業上利用性、新穎性及進步性，完全符合新型專利申請要件，爰依專利法提出申請，敬請詳查並賜准本案專利，以保障創作者之權益。

惟以上所述僅為本創作之較佳可行實施例，非因此即拘限本創作之專利範圍，故舉凡運用本創作說明書及圖式內容所為之等效結構變化，均同理皆包含於本創作之範圍內，合予陳明。

【圖式簡單說明】

第一圖係本創作之立體分解圖。

第二圖係本創作之立體組合圖。

第三圖係本創作之側視圖（去除上蓋）。

第四圖係本創作之俯視圖（去除上蓋）。

【元件代表符號】

10	絕緣本體		
11	主體	12	側架
13	插置空間	14	第一架高凸柱
141	凸塊	15	第二架高凸柱
151	凸塊	16	限位槽
17	擋止部	18	限位槽
20	導電端子		
21	接觸部	22	接腳部
30	第一彈性端子		
31	本體	32	彈性臂
33	焊接部	34	開口
35	簷部	36	倒刺
40	第二彈性端子		
41	本體	42	彈性臂
43	焊接部	44	開口
45	接觸臂	46	倒刺
50	第三彈性端子		

圖式簡單說明

51　彈性臂

60　上蓋

六、申請專利範圍

1、一種電子卡連接器（二），包括：

絕緣本體，其具有一主體及左、右二側架，該主體與該二側架之間形成一插置空間，該絕緣本體側壁設有架高凸柱，該架高凸柱外側具有凸塊；

導電端子，其設置於該絕緣本體之主體上；以及

彈性端子，其各具有一本體、一彈性臂及一焊接部，該彈性臂係由該本體一側延伸而成，該焊接部係由該本體下緣彎折形成，該本體與該焊接部間設有一開口，該彈性端子係組裝於該絕緣本體側壁上，且令該彈性端子之開口與該凸塊相互扣合。

2、如申請專利範圍第1項所述之電子卡連接器（二），其中該導電端子各具有一接觸部及一接腳部，該接腳部延伸出該絕緣本體外。

3、如申請專利範圍第1項所述之電子卡連接器（二），其中該彈性端子之本體上緣向外彎折形成有一簷部，該絕緣本體上緣於凸塊上方處設有一擋止部，該簷部係抵靠於該擋止部。

4、如申請專利範圍第1項所述之電子卡連接器（二），其中該彈性端子之本體二側設有倒刺，該本體二側之倒刺係刺入該絕緣本體中。

5、如申請專利範圍第1項所述之電子卡連接器（二），其中該彈性端子係指一第一彈性端子及一第二彈性端子，且該絕緣本體側壁之架高凸柱係指一第一架高凸柱及一第二架高凸柱，凸塊係分別設於該第一架高凸柱及該第

六、申請專利範圍

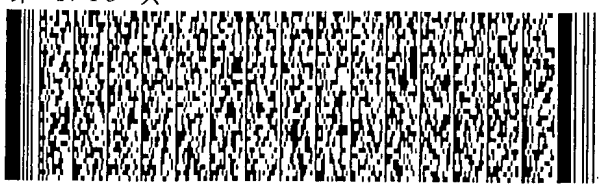
二架高凸柱外側，該第一彈性端子及該第二彈性端子之開口係分別與該第一架高凸柱及該第二架高凸柱外側之凸塊相互扣合。

6、如申請專利範圍第5項所述之電子卡連接器（二），其中該絕緣本體上進一步設有一第三彈性端子，該第三彈性端子具有一彈性臂，且該第二彈性端子之本體另一側延伸形成有一接觸臂，該第三彈性端子之彈性臂係位於該第二彈性端子之接觸臂前方。

7、如申請專利範圍第1項所述之電子卡連接器（二），其中該絕緣本體上進一步的設有一上蓋。

8、如申請專利範圍第1項所述之電子卡連接器（二），其中該絕緣本體一側壁上設有限位槽，該凸塊係位於該限位槽中間，該彈性端子之本體係組裝於該限位槽中。

第 1/16 頁



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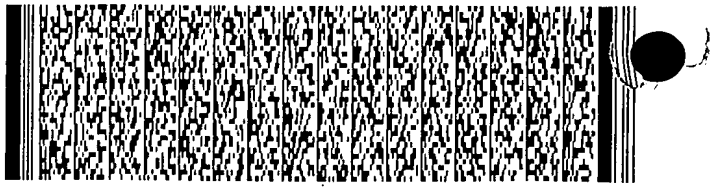

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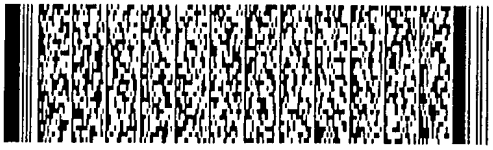
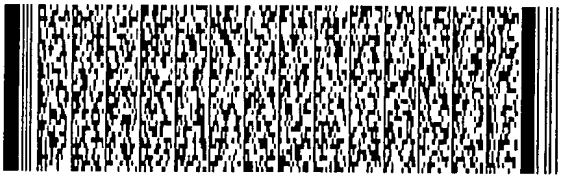


第 4/16 頁

第 5/16 頁



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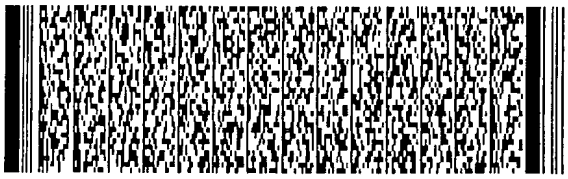

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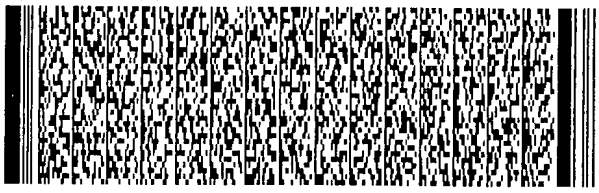

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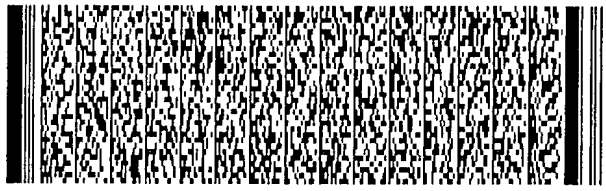
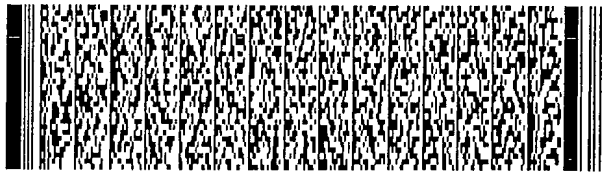


第 7/16 頁

第 7/16 頁



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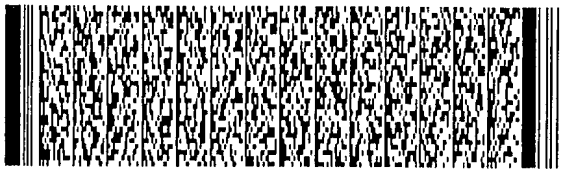

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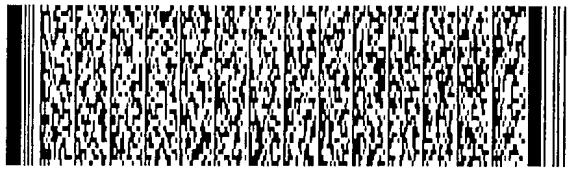

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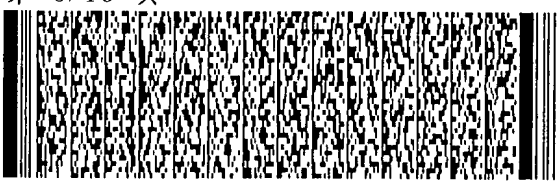

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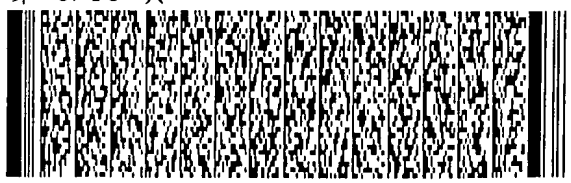

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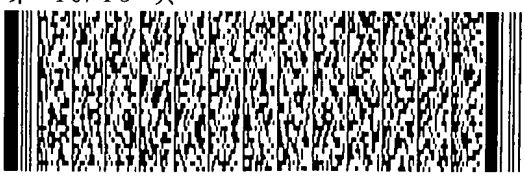

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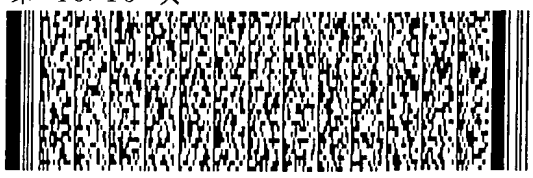

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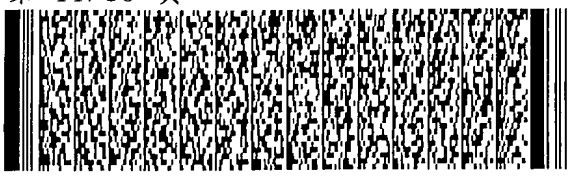

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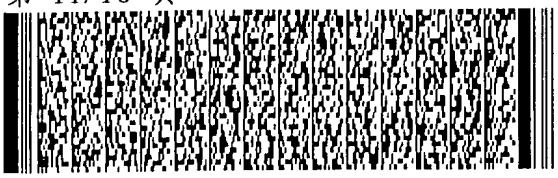

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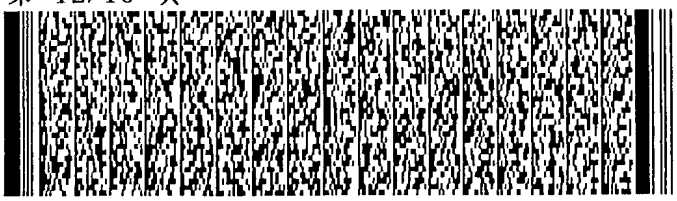

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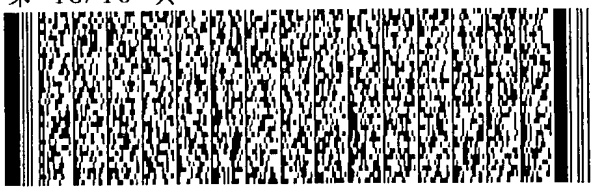
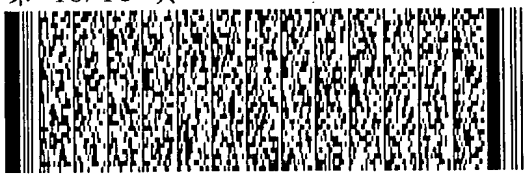


第 14/16 頁

第 15/16 頁



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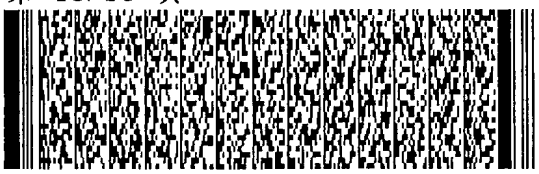

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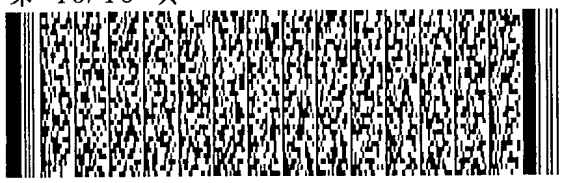

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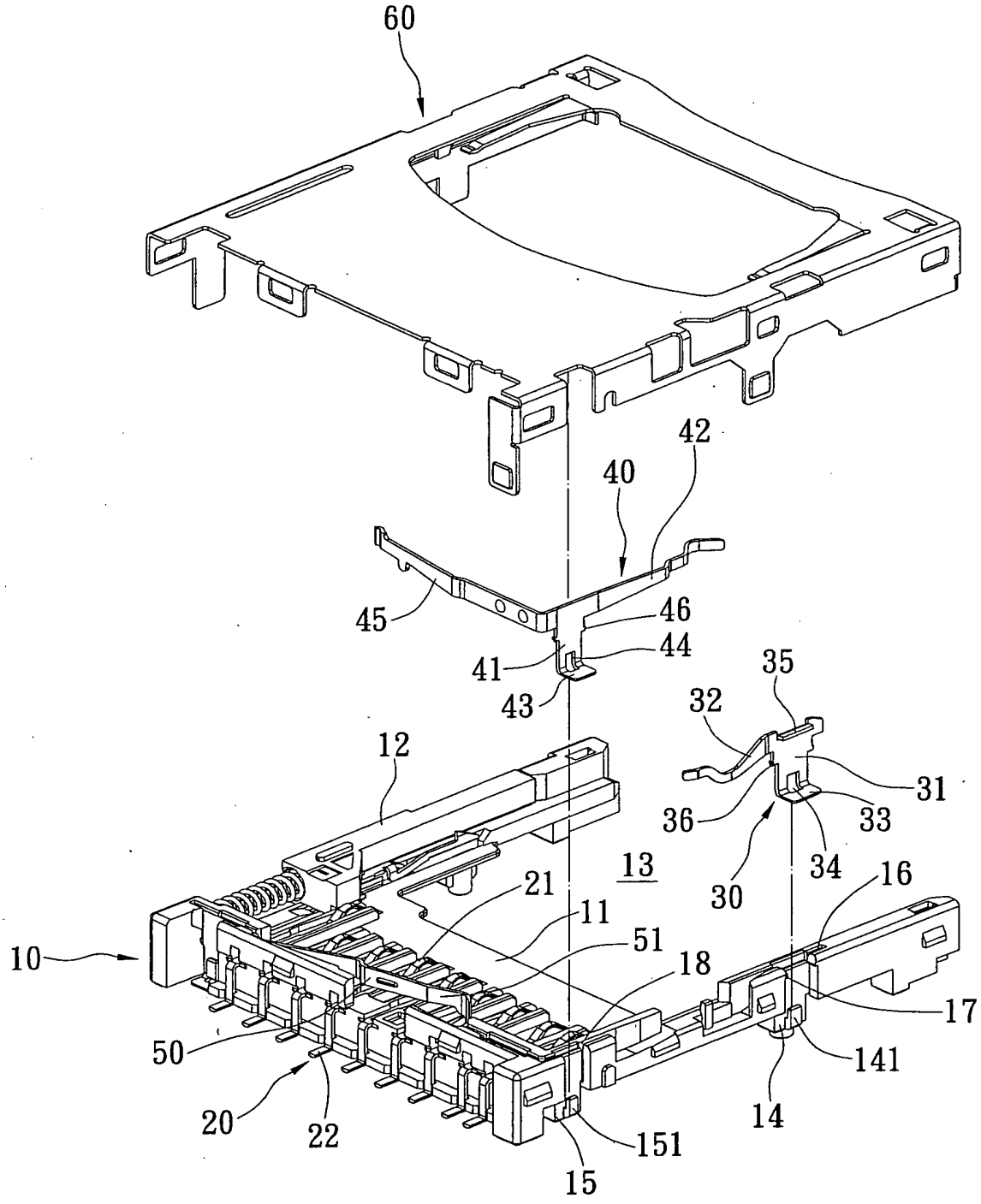
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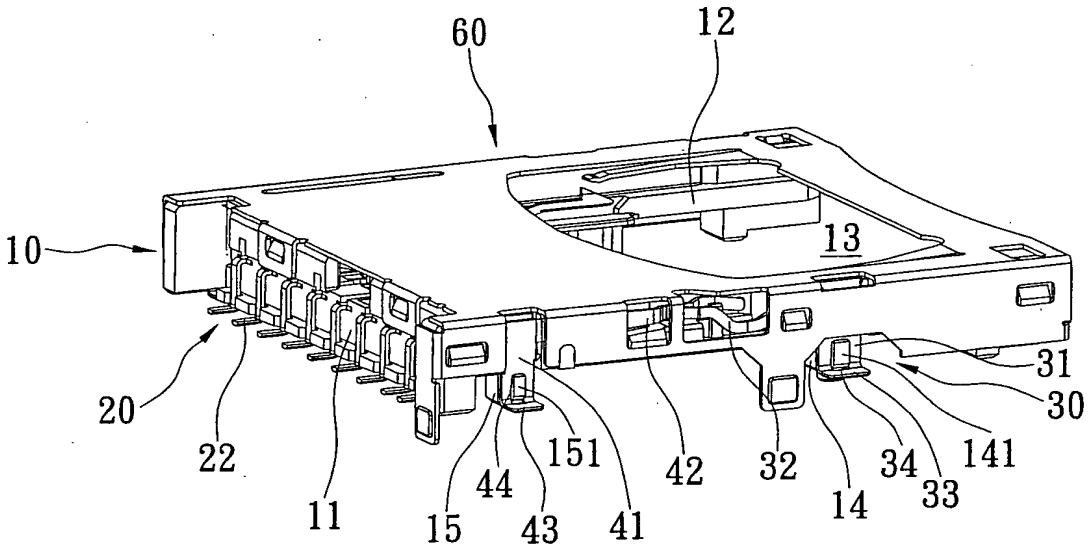
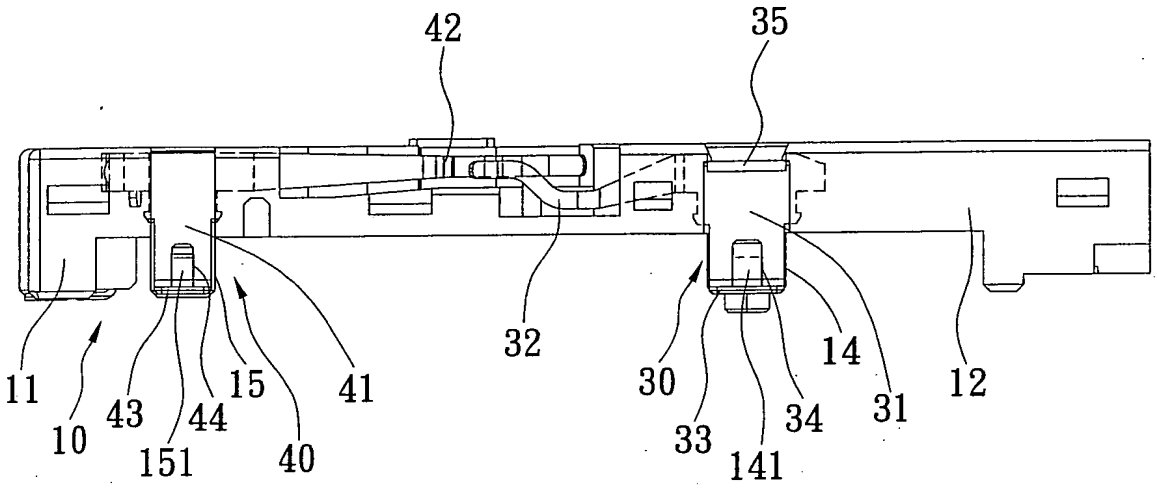
第一圖



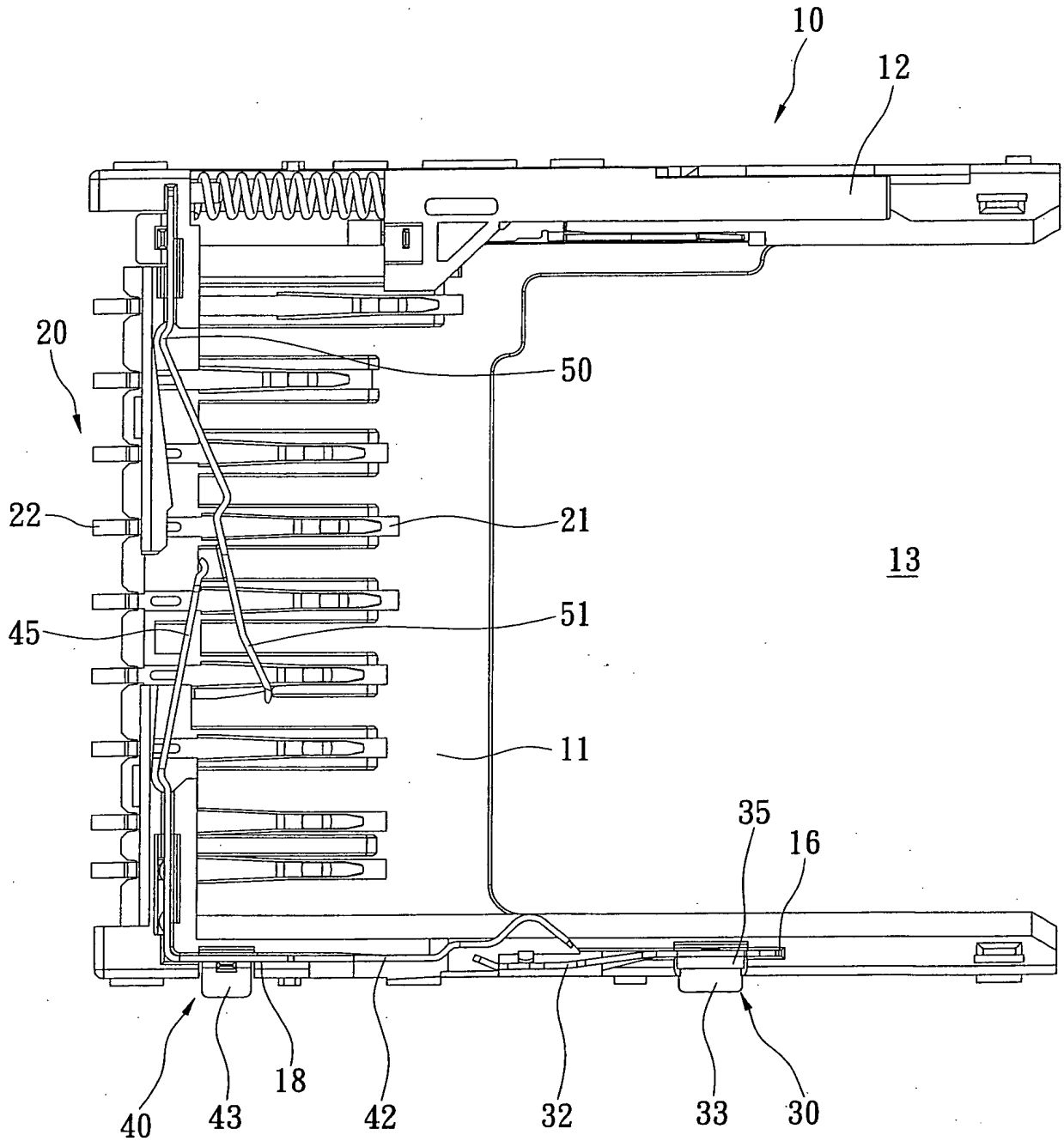
第二圖

圖式



第三圖

圖式



第四圖

A F F I D A V I T

I, Timothy Lu being duly sworn, depose and say:

That I am thoroughly conversant with the Chinese and English languages, that I have carefully read the attached translation and compared same with original document in Chinese language (the application number 92201621), that said translation is a true and correct version of such original, to the best of my knowledge and belief.

My name and post office address are as stated below:

Full name of translator: Timothy Lu

Signature of translator: Timothy Lu

Post office address: 3F, No. 18, Fu-Hsing Road, Taipei, Taiwan, R.O.C.

Date: December 19, 2003

Taiwan Patent App. No.	92201621
Filing Date	JAN. 28, 2003
Molex Ref.	A3-268 UM TW
Lien-Cheng Ref.	92P00085

Title of Invention		ELECTRICAL CARD CONNECTOR
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	Nationality	Taiwan
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	Domicile	2222 Wellington Court., Lisle, IL 60532-1682 U. S. A.
	Nationality	U. S. A.
	Representative	Louis A. Hecht

ELECTRONIC CARD CONNECTOR

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to an electronic card connector and, more particularly to an electronic card connector for providing an electronic card to insert therein, so that the electronic card connector can electrically connected to a circuit structure or a storage device.

2. Description of the Related Art

In general, the electronic card (IC card) is a device of input information that can connect to a circuit structure or a storage device, which for example a word processor, a personal computer or the other circuit structure. The information is stored in the electronic card that will be communicated to the circuit structure. The electronic card is a portable tool that can be inserted or rejected into/from the circuit structure by an electronic card connector.

The electronic card connector of the prior art for inserting or rejecting the electronic card. In general, the electronic card connector includes an insulative housing with a sidewall having two elastic contacts. Each of the two elastic contacts has an elastic arm. The two elastic arms are separated to each other to form a control switch for preventing from loading information.

When the control switch is tuned on in a open state, the electronic card is inserted in the electronic card connector, and the control switch

with one side will contact the elastic arm of one of the elastic contact to outwardly move from the electronic card connector. And the control switch will contact the elastic arm of another elastic contact for electrically connecting the two elastic contacts and communicating the information to a printed circuit board, thereby to turn on the control switch in the open state.

When the control switch is tuned off in a close state, the electronic card is inserted in the electronic card connector, and the control switch with one side will not contact the two elastic contacts, thereby to turn off the control switch in the open state.

However, the electronic card connector of prior art used to be a control switch for preventing from writing data into the electronic card. In general, two reverse stabs and the insulative housing fasten the elastic contact, so that the fastening effect is not good. When the electronic card is inserted or rejected into/from the electronic card connector, the elastic contacts will product swing and looseness, so that the elastic contacts have not good contact between two elastic contacts. Especially, when the elastic contact need to downwardly extended a longer length, the lower portion of the elastic contact will has larger torque in the welding portion. So the elastic contact will provide swing and looseness by transportation process.

SUMMARY OF THE INVENTION

It is therefore a principal object of the invention to provide an electronic card connector that can effectively fasten elastic contacts

thereof, so that the elastic contacts don't produce swing and looseness, have a good contact between the elastic contacts, and for preventing the elastic contacts from outwardly moving, and swinging and loosening by transportation process.

To achieve the above object, the present invention provides an electronic card connector includes an insulative housing, conductive terminals and elastic contacts. The insulative housing has a main body, two side arms arranged at left and right ends of the main body, and an inserting space formed between the main body and the two side arms. Each side arm has a mounting column and a projection disposed at an outside of the mounting column. The conductive terminals are arranged on the main body of the insulative housing. The elastic contacts each has a body, an elastic arm extending from a side of the body, a welding portion bent from an lower edge of the body, and an opening formed between the body. The projection is hooked within the opening, so that the elastic contacts are assembled on the side arms of the insulative housing.

To provide a further understanding of the invention, the following detailed description illustrates embodiments and examples of the invention, this detailed description being provided only for illustration of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

The drawings included herein provide a further understanding of the invention. A brief introduction of the drawings is as follows:

FIG. 1 is an exploded perspective view of an electronic card connector of the present invention;

FIG. 2 is a perspective view of the electronic card connector of the present invention; and

FIG. 3 is a side view of the electronic card connector of the present invention (not shown an upper cover); and

FIG. 4 is a top view of the electronic card connector of the present invention (not shown an upper cover).

DETAILED DESCRIPTION OF THE EMBODIMENTS

Wherever possible in the following description, like reference numerals will refer to like elements and parts unless otherwise illustrated.

Referring to FIGS. 2-4, the present invention provides an electronic card connector for an electronic card inserted or ejected. The electronic card connector includes an insulative housing 10, a plurality of conductive terminals 20, a first elastic contact 30 and a second elastic contact 40. The insulative housing 10 is made of a plastic material. The insulative housing 10 has a main body 11 and two side arms 12 integrally formed to left and right ends of the main body 11, thereby to constitute a U shaped body. The insulative housing 10 has an inserting

space 13 formed between the main body 11 and the two side arms 12 for accommodating the electronic card.

Each of the two side arms 12 of the insulative housing 10 has a first mounting column 14 and a second mounting column 15 for mounting the insulative housing 10 in a predetermined height. The mounting columns 14, 15 of one of the side arms 12 have projections 141, 151 disposed at outsides thereof, respectively. The projections 141, 151 each have an L-shaped body. The insulative housing 10 has two limited slots 16, 18 arranged at one of the side arms 12 thereof, so as to position the first elastic contacts 30 and the second elastic contacts 40. The projections 141, 151 are positioned in middles of the limited slot 16, 18, respectively. The insulative housing 10 has a stop portion 17 disposed above the projection 141.

The conductive terminals 20 are made of a metal with a good conductively and separately disposed on the main body 11 of the insulative housing. Each of the conductive terminals 20 has a contact portion 21 and foot portion 22 formed at two sides thereof, respectively. When the electronic card is inserted into the inserting space 13, the contact portion 21 of the conductive terminals 20 is electrically connected to a complementary terminal of the electronic card. The foot portion 22 is extended out of the insulative housing 10 to weld on a printed circuit board, so as to electrically connect the conductive terminal 20 and the printed circuit board.

The first elastic contact 30 is made of a metal with a good conductively and has a body 31, an elastic arm 32 and a welding portion 33. The elastic arm 32 is horizontally extended from a side of the body 31. The welding portion 33 is bent from a lower edge of the body 31. The first elastic contact 30 further includes an opening 34 formed between the body 31 and the welding portion 33. The body 31 has an eaves portion 35 outwardly bent from a top edge thereof and two reverse stabs 36 opposite to each other.

The body 31 is assembled in the limited slot 16 of one side of the insulative housing 10, and opening 34 and the projection 141 are hooked to each other. The opening 34 with an upper edge is contacted with the projection 141 for preventing the first elastic contact 30 from downwardly moving. The two reverse stabs 36 are pierced into the insulative housing 10, thereby to fasten the body 31 on the insulative housing 10. The eaves portion 35 abuts against the stop portion 17 of an upper edge of the insulative housing 10 for preventing the first elastic contact 30 from upwardly moving. The welding portion 33 is welded on the printed circuit board for electrically connecting with the first elastic contact 30.

The second elastic contact 40 is made of a metal with a good conductively and has a body 41, an elastic arm 42 and a welding portion 43. The elastic arm 42 is horizontally extended from a side of the body 41. The welding portion 43 is bent from a lower edge of the body 41. The second elastic contact 40 further includes an opening 44 formed between the body 41 and the welding portion 43. The body 41 has a

contact arm 45 horizontally extended from a top edge thereof and two reverse stabs 46 opposite to each other. The contact arm 45 and the elastic arm 42 are substantially vertical to each other.

The body 41 is assembled in the limited slot 18 of one side of the insulative housing 10, and opening 44 and the projection 151 are hooked to each other. The opening 44 with an upper edge is contacted with the projection 151 for preventing the second elastic contact 40 from downwardly moving. The two reverse stabs 46 are pierced into the insulative housing 10, thereby to fasten the body 41 on the insulative housing 10. The welding portion 43 is welded on the printed circuit board for electrically connecting with the second elastic contact 40. The elastic arm 42 is disposed in an inside of the elastic arm 32. When the electronic card is inserted into the inserting space 13, the electronic card will contact the elastic arm 42 to outwardly move and electrically connect with the elastic arm 32, thereby to form a switch to prevent from loading by the first elastic contact 30 and the second elastic contact 40.

Moreover, the insulative housing 10 further comprises an upper cover 60 and a third elastic contact 50 disposed thereon. The third elastic contact 50 has an elastic arm 51 arranged at one side thereof. The elastic arm 51 is disposed at a predetermined position in front of the contact arm 45. When the electronic card is inserted into the inserting space 13, the electronic card with one side will contact the elastic arm 51 to backwardly move and connect the contact arm 45 for electrically

connect the third elastic contact 50 and the second elastic contact 40, thereby to turn on the circuit of the electronic card connector.

When the control element of the electronic card is switched loading function on, the electronic card is inserted into the inserting space 13. The control element will contact the elastic arm 42 to outwardly move and connect the contact arm 32 for electrically connect the first elastic contact 30 and the second elastic contact 40 and communicating information to the printed circuit board, thereby to turn on electronic card in open state.

When the control element of the electronic card is switched loading function off, the electronic card is inserted into the inserting space 13. The control element will not contact the elastic arm 42 to outwardly move. The first elastic contact 30 and the second elastic contact 40 are insulating to each other, thereby to turn off electronic card in close state.

In a word, two side arms 12 of the insulative housing 10 have a projection 141, 151 disposed at outsides thereof, respectively. The first elastic contact 30 and the second elastic contact 40 respectively include a opening 34, 44 opposite to each other. The openings 34, 44 are hooked with the projections 141, 151, respectively. The first elastic contact 30 and the second elastic contact 40 are respectively matched to the limited slots 16, 18 by the body 31, 41. The two reverse stabs 36 and reverse stab 46 are pierced into the insulative housing 10 for preventing the first elastic contact 30 and the second elastic contact 40 from moving on all sides and respectively hooking the opening 34, 44 on the

projection 141, 151. The welding portions 33, 43 are respectively welded on the printed circuit board for preventing the first elastic contact 30 and the second elastic contact 40 from downwardly moving. The eaves portion 35 abuts against the stop portion 17 of an upper edge of the insulative housing 10 for preventing the first elastic contact 30 from upwardly moving. Both the first elastic contact 30 and the second elastic contact 40 with a good fasten function. When the electronic card is inserted into the electronic card connector, the first elastic contact 30 and the second elastic contact 40 will not occur the swing and looseness, thereby to retain a good contact between the first elastic contact 30 and the second elastic contact 40.

Furthermore, both the openings 34, 44 and the projections 141, 151 have the same width, so that the first elastic contact 30 and the second elastic contact 40 can be firmly positioned on the electronic card connector for preventing the first elastic contact 30 and the second elastic contact 40 from moving on all sides. Both the first elastic contact 30 and the second elastic contact 40 with a lower portion are positioned by the projection 141, 151 for preventing the first elastic contact 30 and the second elastic contact 40 from outwardly moving, and from swinging and loosening by transportation process.

There has thus been described a new, novel and heretofore unobvious electronic card connector which eliminates the aforesaid problem in the prior art. Furthermore, those skilled in the art will readily appreciate that the above description is only illustrative of specific

embodiments and examples of the invention. The invention should therefore cover various modifications and variations made to the herein-described structure and operations of the invention, provided they fall within the scope of the invention as defined in the following appended claims.

WHAT IS CLAIMED IS:

1. An electronic card connector comprising:

an insulative housing having a main body, two side arms arranged at left and right ends of the main body, and an inserting space formed between the main body and the two side arms, each side arm having a mounting column and a projection disposed at an outside of the mounting column;

a plurality of conductive terminals arranged on the main body of the insulative housing; and

a plurality of elastic contacts each having a body, an elastic arm extending from a side of the body, a welding portion bent from a lower edge of the body, and an opening formed between the body and the welding portion, wherein the projection is hooked within the opening, so that the elastic contacts are assembled on the side arms of the insulative housing.

2. The electronic card connector of claim 1, wherein the conductive terminals each have a contact portion and a foot portion extended out the insulative housing.

3. The electronic card connector of claim 1, wherein the body of the elastic contact has an eaves portion outwardly bent from a top edge thereof, the insulative housing has a stop portion disposed above the projection, and the eaves portion abuts against the stop portion.

4. The electronic card connector of claim 1, wherein the body of the elastic contact has two reverse stabs pierced into the insulative housing.

5. The electronic card connector of claim 1, wherein the elastic contacts are first and second elastic contacts, respectively; the mounting columns are first and second mounting columns, respectively; the projections are arranged at outsides of the first and second mounting columns, respectively; the openings of the first and second elastic contacts and the projections of the first and second mounting columns are hooked to each other.

6. The electronic card connector of claim 5, wherein the insulative housing further includes a third elastic contact having an elastic arm, the body of the second elastic contact has a contact arm extending from another side thereof, and the elastic arm of the third elastic contact is positioned in front of the contact arm of the second elastic contact.

7. The electronic card connector of claim 1, further comprising an upper cover positioned above the insulative housing.

8. The electronic card connector of claim 1, wherein the insulative housing has two limited slots at one of the side arms thereof, the projection is positioned in a middle of the limited slot, and the body of the elastic contact is assembled into the limited slot.

ABSTRACT

An electronic card connector includes an insulative housing, a plurality of conductive terminals, and a plurality of elastic contacts. The insulative housing has a mounting column and a projection disposed at an outside of the mounting column. Each of the elastic contacts has a body, an elastic arm and a welding portion. The elastic arm is integrally extended from the body. The welding portion is bent from a lower edge of the body. Between the body and the welding portion to form an opening. Wherein the projection is hooked within the opening, so that the elastic contacts has a good contact therebetween and for preventing the elastic contacts from outwardly moving, and swinging and loosening by transportation process.

Reference numerals

insulative housing	10		
Main body	11	side arm	12
inserting space	13	first mounting column	14
projection	141	second mounting column	15
projection	151	limited slot	16
stop portion	17	limited slot	18
conductive terminal	20		
contact portion	21	foot portion	22
first elastic contact	30		
Body	31	elastic arm	32
welding portion	33	opening	34
eaves portion	35	reverse stab	36
second elastic contact	40		
Body	41	elastic arm	42
welding portion	43	opening	44
contact arm	45	reverse stab	46
third elastic contact	50	elastic arm	51
upper cover	60		

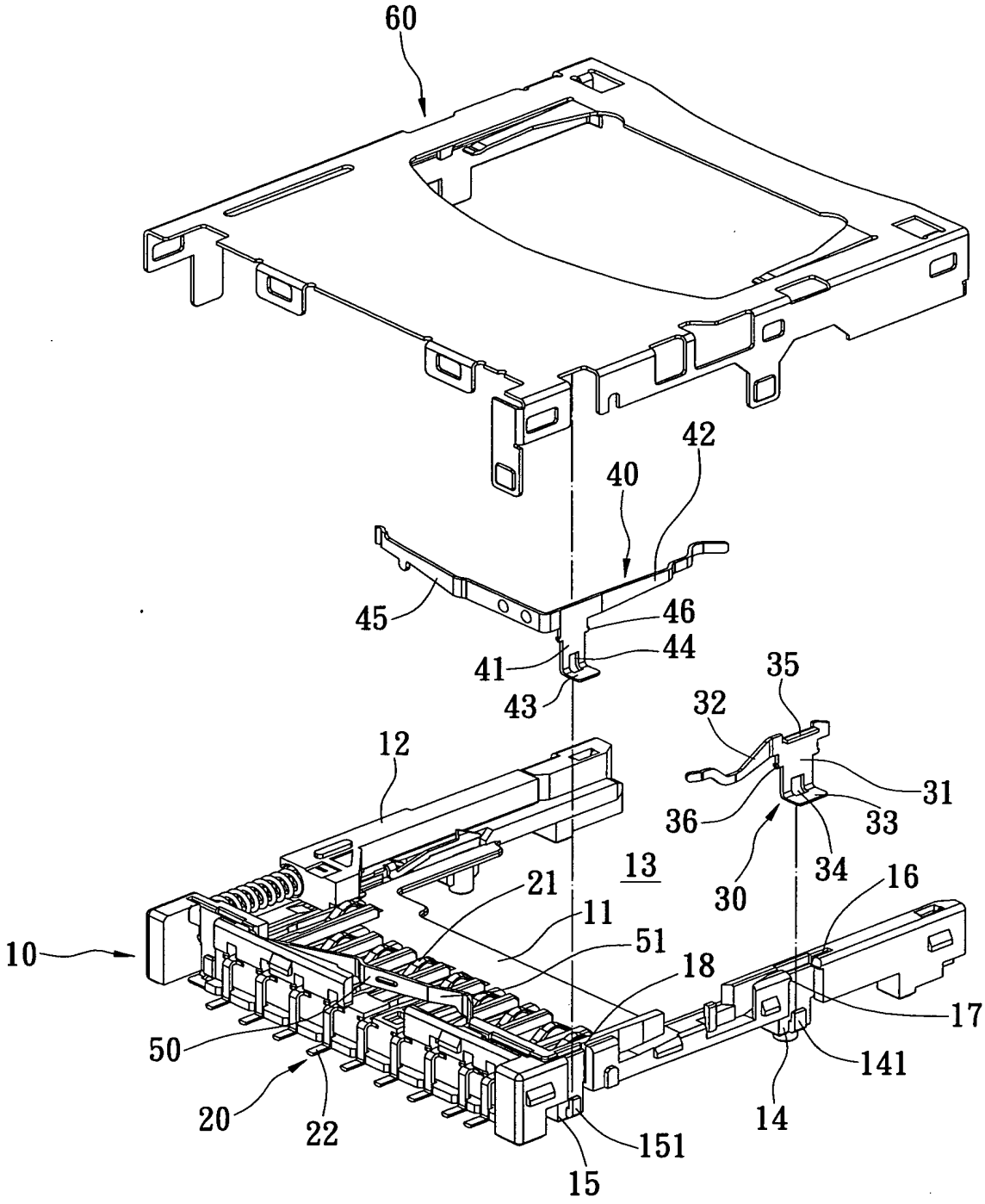
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FIG. 1

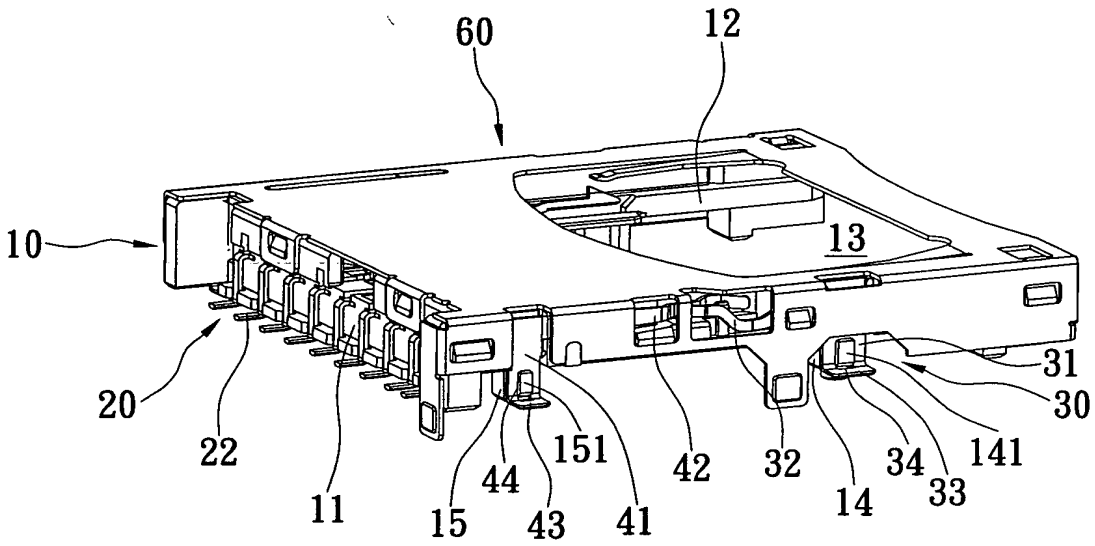

FIG. 2

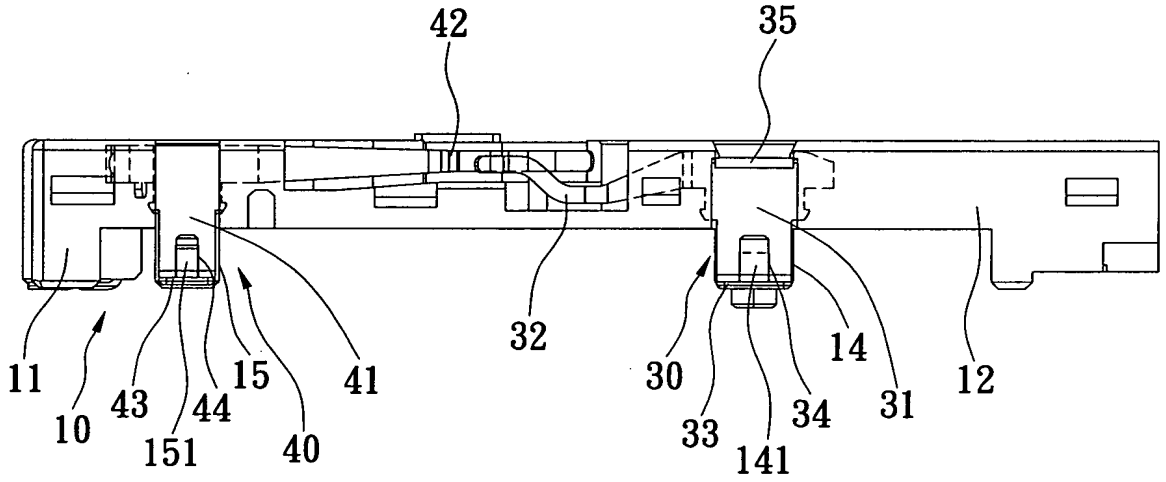

FIG. 3

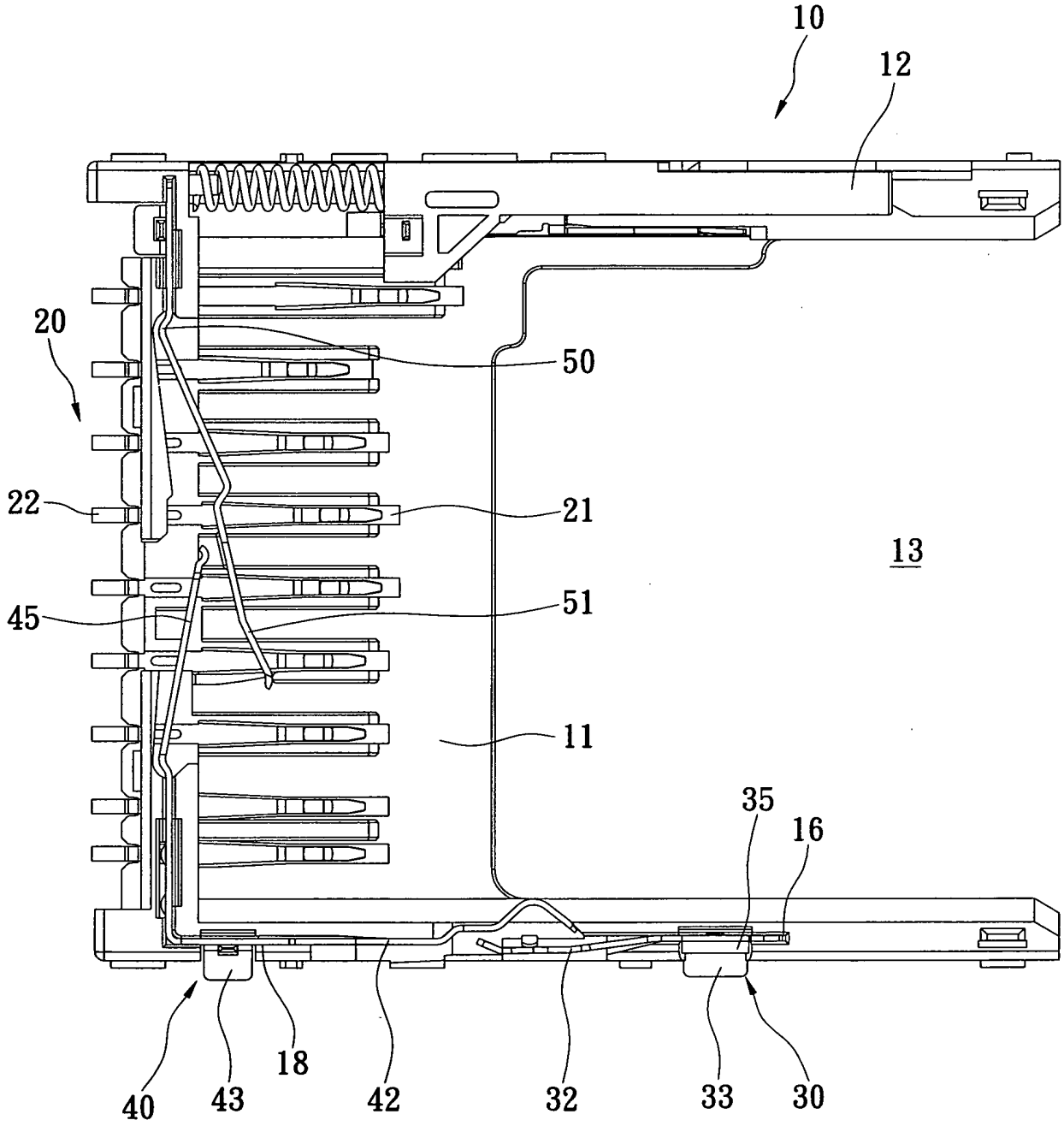

FIG. 4